IC Reports 1940

UNITED STATES DEPARTMENT OF AGRICULTURE

BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE

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TITLE

BARK BEETLE ACTIVITY IN THE
PONDEROSA PINE STANDS OF THE
WEST FORK OF THE BITTERROOT RIVER
1940

by
Archie L. Gibson
Assistant Entomologist

Forest Insect Laboratory
Coeur d'Alene, Idaho
December 20, 1940

SUBJECT—

INDEX NO.—

U. S. GOVERNMENT PRINTING OFFICE 8—9743

UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF ENTOMOLOGY AND PLANT QUARANTINE
WASHINGTON, D. C.

F.S. R-1
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DEC 27 1940
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Forest Insect Laboratory
Coeur d'Alene, Idaho
December 26, 1940

Regional Forester

Missoula, Montana

Attention of Mr. Koch

Dear Sir:

I am enclosing a copy of a report by Mr. Gibson concerning the present status of the western pine beetle infestation in the ponderosa pine stands of the west fork of the Bitterroot River. Your comments or suggestions would be appreciated.

Very truly yours,

JAMES C. EVENDEN
Senior Entomologist

Enclosure

cc to Forest Supervisor, Bitterroot N. F.

BARK BEETLE ACTIVITY IN THE PONDEROSA PINE STANDS ON THE WEST FORK OF THE BITTERROOT RIVER 1940

by
Archie L. Gibson
Assistant Entomologist

INTRODUCTION

The forest ranger report of forest insect conditions for the 1939 season indicated a situation that warranted a detailed examination of the ponderosa pine stands on the west fork of the Bitterroot River. This report showed a light infestation of the western pine beetle distributed throughout the ponderosa pine stands of this drainage, which was considered as increasing in severity. Although this situation was not considered as serious, an intensive examination was planned to obtain more detailed information as to the actual status of the infestation. The area covered by this examination extended southward from the forks of the Bitterroot River to the limits of the ponderosa pine timber on the west fork.

DESCRIPTION OF THE AREA

In this drainage the predominating timber type varies from pure to mixed stands of ponderosa pine. Pure stands of ponderosa pine occur along the lower elevations but give way to mixed types as the elevation increases.

A number of years ago a severe mountain pine beetle infestation swept through this area, killing most of the lodgepole pine of eight inches or more in diameter, and a large percent of the ponderosa pine volume. The ponderosa pine was confined quite largely to large trees

in association with or adjacent to areas of infested lodgepole. The remaining ponderosa pine stands are apparently in a healthy growing condition.

STATUS OF BARK BEETLE INFESTATION

This examination was extensive in character and consisted in obtaining a visual reaction to existing conditions within the different areas examined. Some sample strips were taken from two drainages, as a check upon the writer's reaction to conditions as encountered within other areas. The data from these strips are shown in the following tabulation. In order to obtain data as to the percent of loss, both green and insect-attacked timber was recorded.

SURVEY DATA FROM WEST FORK OF BITTERROOT RIVER
1940

Area surveyed	Acres of strip	Ponderosa pine: Green	Ponderosa pine: W.pine beetle Killed 1940	Ponderosa pine: W.pine beetle Percent killed	Douglas fir: Green	Douglas fir: Douglas fir beetle Killed 1940	Douglas fir: Douglas fir beetle Percent killed
Soda Springs Cr.	34.9	14.7	.086	.6	10.6	.060	.54
Little Blue Joint Cr.	41.8	9.1	--	--	19.1	.100	.50

The preceding data show a light loss of .08 of an infested tree per acre for the Soda Springs Creek, with no indication of an infestation for the other drainage. However, this must not be taken as an indication that there are no insect-attacked trees within this drainage, but rather that the infestation was so light that it was not revealed by a survey of such low intensity. In the Little Blue Joint drainage a

lightning-struck Douglas fir and the few trees that were damaged by the small fire that resulted were attacked by the Douglas fir beetle. However, an infestation of even a much greater severity prevails throughout most all Douglas fir stands of the northern Rocky Mountains.

GENERAL NOTES ON THE STATUS OF BARK BEETLE CONDITIONS WITHIN THE AREAS EXAMINED

Soda Springs Creek

Although most of the ponderosa pine in this drainage is mature, the trees show good crowns and dense, healthy foliage. Perhaps 5 percent of the ponderosa pine trees show the characteristic crown and foliage of less vigorous trees. Mistletoe seems to be a serious enemy of Douglas fir in this drainage and has left many trees in a decadent condition.

The status of bark beetle infestation within this area was shown in the preceding tabulation of strip data.

Little Blue Joint Creek

In spite of the overmature ponderosa pine no 1940 western pine beetle attacks were found on the sample strip run in this area. There were some fading trees noted within the drainage, indicating the presence of new attacks; however, they were not in excess of the red tops of trees killed prior to the present season.

Piquett Creek

On approximately 1,500 acres of the Piquett Creek drainage only 12 sorrel-topped 1940-attacked ponderosa pine were observed, an average of .008 trees per acre. This unit contains much large, overmature ponderosa pine.

Barker and Pierce Creeks

On about 1,300 acres of ponderosa pine type, 12 sorrel-topped trees were observed, an average of .01 trees per acre.

Piquett Creek North for Three-fourths mile along West Fork

Approximately 500 acres showed 6 sorrel-topped trees, or about .012 trees per acre.

West Fork Between Rombo and Ditch Creeks

A light infestation in both ponderosa pine and Douglas fir. On the fire area on the west side of the river between Ditch Creek and the dam, the many weakened Douglas fir will probably furnish host material that will result in a decided increase in losses in that vicinity from the Douglas fir beetle in the next year or two.

Reservoir

The construction of the dam on the West Fork entailed the cutting of much timber at the dam site, in the basin that is filled by the retained water and on the right-of-way of the new road above high-water mark. This cutting, the exposure of the logs to bark beetle attack for periods of varying length, and the general disturbance of growing conditions are probably responsible for the heavier than average concentration of bark beetle attacks around the reservoir. In the portions of the stand that could be seen 40 sorrel-top ponderosa pine were counted and an equal number of fading Douglas fir. It is probable that the approximate one-third of the timber stand not visible, but a part of the above timber, contained an additional 20 attacked trees of

the same two timber species. The acreage involved was probably about 600, which would indicate an infestation of .1 tree per acre.

Disturbance of site conditions in the area just discussed will probably result in a continuation of losses until the stand has become adjusted to these changes.

Coal Creek

Only two sorrel-topped ponderosa pine were noted on this drainage.

Deer Creek

Only two sorrel-topped ponderosa pine were noted on this drainage.

Deer Creek to Johnson Creek

Along the slopes bordering the West Fork and a short distance up the tributary drainages, only an occasional sorrel-topped tree could be observed. Ponderosa pine was only present on the warmer exposures in these upper drainages of the West Fork.

Hughes Creek

The fires on this drainage have weakened so much timber that it is likely losses will increase for a few years in both ponderosa pine and Douglas fir. At present only scattered sorrel-topped trees (from bark beetle attack) can be observed. There is a large amount of sorrel foliage as a result of fire scorching.

Overwhich Creek

Only an occasional sorrel-topped tree observed on this drainage.

Nezperce Fork

Only occasional sorrel-topped ponderosa pine noted on this drainage. A view into the lower four miles of Watchtower Creek revealed no fading ponderosa pine. The latter species comprises but little of the stand west of Sheephead Creek and only two fading trees were noted between Sheephead and Watchtower Creeks.

CONCLUSIONS

The present status of the bark beetle situation within the West Fork drainage is quite satisfactory. However, as so-called normal infestations often develop into destructive epidemics in a few years, the potential danger of the west fork situation should not be overlooked. These areas should be kept under constant supervision in order to foresee the occurrence of such an outbreak, which can be prevented through the institution of artificial control.